

REMARKS/ARGUMENTS

This application has been carefully considered in light of the Initial Office Action of August 27, 2003. In the Initial Office Action claims 14 through 28 have been rejected under 35 U.S.C. 112, second paragraph, as being indefinite. In this respect, the claims have carefully amended in order to overcome this grounds for rejection. Therefore, reconsideration of this grounds for rejection is respectfully solicited.

Claims 19 and 28 are objected to under 37 CFR 1.75(c) as being improper dependent claims. In this respect, these claims have been cancelled without prejudice.

Claims 14, 15, 16, 18, 19 and 28 have been rejected under 35 U.S.C. 103(a) as being obvious and therefore unpatentable over any of the references to Stuth, Tang, Cox or McKinney when considered in view of either of the secondary references to Rose and Zitzelsberger et al. Claims 20, 26 and 27 have been rejected under 35 U.S.C. 103(a) over the previously identified references when further considered in view of the reference to Warner.

Claims 17 and 23 have also been rejected under 35 U.S.C.

103(a) as being obvious and therefore unpatentable over the previously identified references when further considered in view of the reference to Stuart.

Claims 21, 22, 24 and 25 have been indicated as being directed to allowable subject matter if rewritten to overcome the rejection under 35 U.S.C. 112, second paragraph, and to include all the limitations of the base claim and any intervening claims.

For the reasons discussed below, reconsideration for the grounds for rejection for obviousness is respectfully solicited. The present invention is directed to a method and to a plant for an efficient cleaning of polluted water so that clean water may be forwarded to a recipient such as a lake, river or the like. The invention achieves a sufficient treatment of the polluted water by a series of successive steps which include the following:

- 1) separating suspended solids from the polluted water;
- 2) treating the water in a biostep filter in order to remove organic, biological material and microorganisms to thereby reduce the BOD content of the water; and

3) thereafter passing the treated water through a sorbent filter for removing pollutants such as phosphorous materials and heavy metals in an ion exchange process. It is respectfully submitted that none of the prior art discloses such a three step process wherein the steps are taken in succession as described in order to purify polluted water in order to enable it to be forwarded to a recipient such as a lake or river.

The primary reference to Stuth discloses a plant which includes a septic tank which is divided into two chambers. The first chamber 12 acts as a settling chamber and from there water passes to the second chamber which includes an aerobic digester 52. The digester is in the form of a cylindrical casing which carries a medium 56 having aerobic bacteria thereon. The water passes from the tank to an effluent outlet. There is no discussion in the reference of providing for any method of treating complicated pollutants, such as metals including phosphorus materials and other heavy metals. Without recognizing the need for treatment of such complicated pollutants, it is not believed that it would be obvious for one of ordinary skill in the art to combine any of the secondary references to provide for such a process step.

The reference to Tang discloses a plant similar to that of Stuth which includes a biofilm in a second chamber. The biofilm includes a plastic material supporting medium. Again, there is no recognition of the need to remove complicated pollutants such as metals, including phosphorus and heavy metals, and therefore, it is again believed that one of ordinary skill in the art would not look to modify the reference to Tang to include an ion exchange process step.

The reference to Cox also includes a biofilter material medium shown at 10 for removing bacterial growth. The medium has a large surface in comparison to volume. Again, there is no recognition in the process disclosing Cox of a need to remove the complicated metal pollutants in a sorbent material ion exchange process as is disclosed in the present invention. Rather, Cox utilizes a downstream mechanical filter shown at 16.

The reference to McKinney discloses a cleaning tank 10 which incorporates a filter 28 having a filter element 54 which permit polluted water to pass through a plurality of small openings wherein an aerobic bacterial growth takes place. McKinney also does not disclose the need for removing complicated metal pollutants such as phosphorus or heavy metals and it is,

therefore, respectfully submitted that one of ordinary skill in the art would not look to modify the process of McKinney to include such a process step.

The reference to Rose discloses a process which incorporates a septic tank 20 and a zeolite tank 24. The reference however does not provide any means for removing organic pollutants which is the case with the present invention prior to any ion exchange process which may take place in the zeolite tank. It is respectfully submitted that one of ordinary skill in the art would not be led to incorporate the process of Rose with any of the primary references as Rose does not provide for any type of intermediate biostep filtering which is paramount in each of the primary references. Therefore, one having the primary references and the secondary references before them would not be induced to combine the two.

The reference to Zitzelsberger et al. has been cited as showing a sintered polyethylene material to support microorganisms in a biofilter. As with the primary references, there is no disclosure providing for any type of treatment for complicated pollutants including metals such as phosphorus or heavy metal and therefore, even if one were to combine the

teachings of Zitzelsberger with the primary references, the complete three step process of applicants' invention would not be disclosed.

The reference to Warner discloses a compact treatment plant including a multi-chamber septic tank with elongated partitioned crossover conduits and includes a compartment with a filter shown at 29. This reference has been cited as disclosing a pump to move the water through the septic tank. Even if one were to combine the use of the pump with the remaining references, the unique three step process of applicants invention would not be disclosed for the reasons set forth above.

It should be noted that applicants' process, wherein the biotreatment takes place as an intermediate step, prevents the buildup of microorganisms on the sorbent material in the final ion exchange process wherein the metals are removed from the waste water. This step in combination with the first and second steps of separating the sludge and thereafter the organic treatment are not disclosed by the prior art and are not believed to be an obvious modification of the prior art for the reasons as set forth above.

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In view of the foregoing, favorable consideration of the claims as amended is respectfully solicited and allowance of the claims requested.

Should the Examiner have any questions concerning this response or the amendments to the claims it would be appreciated is the Examiner would contact the undersigned attorney of record at the telephone number shown below for further expediting the prosecution of this application.

Respectfully submitted

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